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The Commonwealth of Massachusetts

ANNUAL REPORT

OF THE

BOARD OF REGISTRATION IN OPTOMETRY

FOR THE

YEAR ENDING NOVEMBER 30, 1924

DIVISION OF REGISTRATION.
DEPARTMENT OF CIVIL SERVICE AND REGISTRATION

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The Commonwealth of Massachusetts

REPORT

BOARD OF REGISTRATION IN OPTOMETRY,
146 STATE HOUSE, BOSTON, MASS., Jan. 7, 1925.

To WILLIAM F. CRAIG, *Director of Registration.*

SIR:—The Board of Registration in Optometry has the honor to submit to you its thirteenth annual report, as required by Section 67, Chapter 112 General Laws.

The Board has held during the year, three examinations; in February, June and November. The total number of candidates examined was 85. Of this number 32 passed and 53 failed.

The following written examination was given November 18, 19, 20:—

ANATOMY - PHYSIOLOGY - PATHOLOGY.

H. C. DOANE

Answer three questions from each section and one more from either section to make ten in all.

ANATOMY.

1. Name three transparent elements of the human eye. Describe completely the tunics by which each of them are enclosed.
2. Describe the vascular system of the eye.
3. Give the origin, course, insertion and nerve supply of the extrinsic muscles of the eyeball.
4. Does the iris lie in contact with the crystalline lens?

PHYSIOLOGY.

1. Discuss the function of the crystalline lens.
2. Discuss the function of the retina, naming the layer where the impression of light is obtained.
3. What are the functions of the meibomian glands, lachrymal glands, conjunctiva.
4. Give the functions of (*a*) the spaces of fontana (*b*) tenons capsule.

PATHOLOGY.

1. Discuss Choroiditis—name three varieties, give causes of each and symptoms and describe fully conditions as shown by the ophthalmoscope.
2. Describe fully symptoms and ophthalmoscopic appearances of Hyalitis.
3. Describe fully appearance of the papilla in papillitis as disclosed by the ophthalmoscope.
4. Define (*a*) Hordeolum (*b*) Chalazion. How would you differentiate between them?

PRACTICAL OPTICS.

M. J. FOWLER.

1. What are the base curves of PCX, PCC, Meniscus Cx. and Ce., and Toric Cx. and Ce.?
2. What would be the curves of the wafers, adding plus 2.00 for near if the distance Rx calls for flat lenses of the following power: O. D. + 1.00 + 50×90 and O.S. — .50 —.50 × 180? What would be the curves of the wafers if they were toric lenses?
3. Transpose the following:
   a. + 2.00sph. — — .37cyl ax 40.
   b. — 1.00sph. — + 1.25cyl ax 140.
   c. + .75cyl ax 90 — — .87cyl ax 180.
4. (*a*) What are the imperfections that may be present in an optical lens?
   (*b*) What kind of lenses were the first spectacle lenses?

5. Why are toric lenses better for the patient than flat ones?

6. How would you surface grind and polish a wafer from an old plus 1.00 PCX lens, the wafer to go on a Cx Meniscus lens and add plus 1.00 for near vision?

7. Why is the cylinder ground on the inside of a kryptok?

8. What kind of a bridge would you give if a rule held across the nose, where the bridge would come, showed that the eyelashes were set in from the ruler about ¼ inch, and the pupils of the eyes were about ¼ inch below the point where the bridge would come on the front of the nose?

9. Could this Rx be filled correctly? Plus 2.00 × 180, to be 38mm round and decentered in 5mm to get 1 prism diopter effect?

10. Name and illustrate fifteen different forms of lenses.

Practical Optometry.

G. S. Houghton.

Answer ten of the following questions:

1. Patient 22 years of age requires O.D. a + 3.00 Cyl. ax. 135 O. S. a + 400 Cyl. ax. 40 which gives perfect comfort for distance but complains that near work uncomfortable. What would you suspect as the cause? How would you handle the case.

2. Discuss fully your procedure in handling this case. Patient, student 23 years of age complains of inability to fix mind on study or reading, vertigo, drowsiness and general nervous disturbance.

3. Name four of the six generally accepted causes of Heterophoria.

4. Discuss fully your reasons for using the Ophthalmoscope describing both the direct and indirect methods and values of each.

5. Patient age 25 calls for examination. By the usual static method at 1 meter a + 2.50 D. sphere causes reversal of shadow; by the dynamic method at 1 meter a + 1.50 D. sphere and at 16 inches a + 275 D. sphere. What glasses would you advise for constant use?

6. Patient 45 years of age calls for examination. By the usual static method at ½ meter a + 3.00 D. sphere stops motion: by the dynamic method at 1 meter a + .75 D. sphere and at 16 inches a + 200 D. sphere. What glasses would you advise for constant use?

7. Patient 24 years of age—filing clerk—unable to read names 10 inches above the 180 meridian. What trouble would you suspect and how would you proceed to overcome the difficulty?

8. Patient 32 years of age—teacher—history, frontal and occipital headaches, black specks before eyes and bright light. With plain mirror by the dynamic method a 1 meter O.D. + .50 = — 1.00 Cyl. ax. 75 O.S. + 1.50 = — .75 Cyl. ax. 180. Subjectfully O.D. — 1.00 Cyl. ax. 75 O.S. + .50 = — .75 Cyl. ax. 180. Orthorphoria at 20 ft. 10° Esophoria at 14 inches. What glasses would you advise for constant use? Discuss your reasons.

9. Patient 12 years of age, student, Anemic, under developed, neurasthenic. History, nervous since birth, unable to do near work wearing O.S. + 3.50 = — 2.00 Cyl. ax. 15 O.S. + 4.50 = — 1.00 Cyl. ax. 180 which gives visual acuity O.D. 20/40 O.S. 20/70. By the dynamic method at 1 meter O.D. + 3.00 = — 2.00 Cyl. ax. 15 O.S. + 3.75 = — 1.00 Cyl. ax. 180. Visual acuity O.D. 20/30 O.S. 20/50. Dynamic method at 16 inches O.S. + 4.50 = — 2.00 Cyl. ax. 15 O.S. + 5.50 = — 1.00 Cyl. ax. 180. Discuss how you would handle this case and give powers and kind of lens for constant use.

10. Patient 30 years of age—Compositor. History, protruding eyes 5mm pupils, poor reflex, tension normal. With plain mirror static method at 1 meter O.D. + 2.00 D. Sphere O.S. + 275 = — 25 Cyl. ax. 165. By dynamic method at 16 inches O.D. + 2.75 Sph. O.S. + 3.50 = — 25 Cyl. ax. 165. 10° Esophoria at 20 ft. 5° Esophoria at 14 in. Discuss how you would proceed in this case and glasses suggested for constant use.

11. (*a*) Patient 50 years of age, illiterate, able to distinguish colors. Plain mirror at 1 meter dynamic method a + .25 Sph. O.U. at 16 in. dynamic a + 2.00 D. Sph. O.U. What glasses would you advise. (*b*) Name and describe another test by which you could find the powers of lens required for near work.

12. Patient 55 years of age requires O.U. — 5.75 D. spheres for distance — 2.25 D. spheres for near work. It requires 18° of prism base out to fuse

light at 20 ft., and 14° prism to fuse at 12 in. What prescription would you recommend for constant use, using one pair of glasses.

Theoretic Optics.

W. I. Brown.

1. Describe:—
   (*a*) Regular reflection.
   (*b*) Diffuse reflection.
   (*c*) Rectilinear propagation of light.
2. What do the following terms indicate?
   (*a*) Absolute index of refraction.
   (*b*) Relative index of refraction.
3. What determines the velocity of light in a given medium?
4. (*a*) How is the wave length of light determined?
   (*b*) How is the frequency of the undulations determined?
5. Define the following and draw a diagram locating the same:
   (*a*) The Focal planes and Focal points.
   (*b*) The Principal planes and the Principal points.
   (*c*) The Nodal planes and the Nodal points.
6. State Law of Refraction.
7. When a convergent lens is placed in front of an emetropic eye, where must an object be situated so that it will be seen without accommodation?
8. Describe Polarization of light.
9. Give an explanation of Fraunhofer's lines in the solar spectrum.
10. If a + 6.50 D. lens be moved from a position 11mm. in front of a given plane to 18mm. in front of that plane, what will be the change in its effective power?
11. Determine the oblique power of a 10° prism at 45°.
12. Describe briefly what is necessary under the following headings to obtain best visual acuity, comfort and efficiency:
   (*a*) Definition.
   (*b*) Size.
   (*c*) Illumination.
   (*d*) Contrast.
   (*e*) Stray light.

Theoretic Optometry.

S. W. Baker.

Answer ten questions only.

1. What are the points of resemblance, also difference between a case of spasm of accommodation and a case of myopia?
2. What is mixed astigmatism, describe best methods of testing such a case.
3. How does presbyopia differ from acquired hyperopia.
4. State some reasons why opthalmometer readings cannot always be relied upon.
5. What is the difference between an amblyopic and an asthenopic eye.
6. In what way does fusion differ from binocular single vision.
7. Which has the most fully developed of accommodation, the myope or the hyperope, state reasons.
8. In muscle anomalies which is the most important to correct 5° of esophoria, 5° of exophoria, or 5° of hyperphoria, state reasons.
9. Why is it necessary to measure the amplitude of accommodation and convergence, explain your methods.
10. Explain symmetrical astigmatism.
11. What is meant by dominant and non-dominant eye.
12. What would be the size of letters for a person to see that has 2/5, 3/10 or 1/3 vision.

The examinations as in previous years have occupied four days, the first three being devoted to written examinations on theoretic, technical and practical subjects, while the fourth is devoted to practical demonstration of the use of instruments and methods used in the practice of optometry. In the quality and scope of the written examination the Board has during the year maintained

very high standards. The practical demonstration required of the applicant has been more comprehensive than in former years. The Board maintains that before issuing a certificate of registration an applicant must demonstrate a practical understanding of the methods, and proficiency in technique with the instruments used. The applicant is therefore required to make a complete routine examination of a subject's eyes, write a prescription, demonstrate his ability to properly adjust eyeglasses and spectacle frames and to analyze and neutralize ophthalmic lenses.

All applicants are required to attain the grade of 70 per cent as a passing mark in each subject. Those failing in two subjects only are required to take those subjects again at a subsequent examination. Those failing in more than two subjects are required to take the entire examination over again.

The Board, with the efficient aid of the Department of Public Safety, has investigated numerous reports of violations of the optometry law. No prosecutions have been necessary, but several cases of questionable practice have been effectually stopped.

In our annual reports of 1922 and 1923 the Board made specific recommendations for changes in the law to require that all applicants for examination and license shall be graduates of recognized and approved optometry schools, and that investigators be provided the Division of Optometry for the purpose of regular and constant investigation and vigilance throughout the Commonwealth for all those registered under the Optometry law and to apprehend violators of the law. Bills containing provisions for these recommendations were submitted with our reports. No action was taken by the Legislature.

The Board is strongly of the opinion that certain changes in the law should be made and respectfully submit in this report the following letter which was sent to the Joint Legislative Committee appointed by the last General Court to investigate all matters relating to the department of Registration, and which definitely states what we believe to be necessary changes:

"August 18, 1924.

HON. EBEN S. DRAPER, *Chairman.*

Special Committee on Registration Laws,

Room 448, State House,

Boston, Massachusetts.

DEAR SIR:—In compliance with your request, it gives me pleasure to submit herewith, as concisely as I am able the remarks I made to your committee on Wednesday, August 13th. Let me first express my appreciation of the courtesy and attention given me at that time by your committee.

The Optometry Board has been functioning in this Commonwealth since 1912. This law was passed by the Legislature for the purpose of regulating the practice of Optometry and for the protection of the public against incompetency. At the present time every state in the Union, together with the District of Columbia have similar laws defining the practice of Optometry, and providing for the examination and registration of this class of practitioners.

The law as originally passed in this Commonwealth, provided that the fee for examination and registration should be $25.00. When certain amendments were made to the law in 1920, the stipulation of the fee was inadvertently omitted. The Board feels that this should be re-incorporated in the law and would suggest that this be done. The fee for registration by Reciprocity as now defined in the law is $50.00. We believe that this is fair and should remain as it is. The law also requires an annual registration, and if in the opinion of your committtee it seems advisable to recommend an increase in the amount of the annual registration fee, it would meet with the approval of our Board.

Since 1912, the educational standards both as to preliminary and professional requirements have been raised materially. The law now states that an applicant for registration must have four years' high school education or its equivalent. The equivalent to be determined by the Board by examination in high school subjects. The matter of determining the equivalent of a high school education is a very difficult problem. Our Board has had the advice and help of the Department of Education in this particular phase of our work. When it has

been found necessary to give an examination to determine an applicant's high school qualifications it has been the custom to use the Entrance examinations to the State Normal School. This has not been entirely satisfactory. Our Board would suggest that the law be changed so as to eliminate the word "equivalent" and that the applicant be required to furnish a statement from the Department of Education that he has the required four years' high school education.

As to Professional educational standards, the law now requires an applicant for registration to be a graduate of an Optometry school or College approved by the Board, which maintains a course of study of not less than two years, and of one thousand attendance hours. Our Board feels that a two year course of special training is a minimum for the proper training, but would respectfully call your attention to the fact that several Optometry schools are providing three and four year courses, indicating that the demands of higher education are increasing. The question of rating the professional schools should be done by some agency which has properly trained men to judge from an educational standpoint, all phases of a school or college, which includes its quarters, its equipment, its curriculum, the number of teachers for the number of students enrolled, the personal qualifications of the teaching staff, also the educational attainments of this staff; the completeness of laboratory equipment and clinical facilities.

It might be of interest to your committee to know that in 1921, through the International Association of Boards of Examiners in Optometry, of which organization I was Secretary at the time, an educational conference was held in St. Louis. It was attended by representatives of the Board of Examiners, also from the Federation of Optometry schools and from the National Organization of Optometrists. As a result of this conference there was drafted an outline of what should constitute a Class A Optometry school. A copy of the report of this conference containing this outline I am glad to submit herewith, hoping that it may be of interest to you. It is also interesting to note that as a result of the adoption of this outline of a Class A school by the International Association of Boards, the various schools of the country have voluntarily increased their standards with the result that many of the States are now recognizing only those schools which meet these standards. There is also a Permanent committee in the International Association whose duty is to scrutinize the various schools of the Country and report each year to the Association.

The law as it now stands in this Commonwealth gives our Board the power to approve Optometry schools. We believe it would be wise to leave this as it is, but, if in the opinion of your Committee this is unwise we would suggest that the words "approved by the State Department of Education" be used instead. There is no doubt but that the Department of Education would have access to the various agencies that have the means of investigating and classifying various professional schools.

There is a clause in our law which also permits a person to register with the Board as a student, and then pursue the study of Optometry with some registered Optometrist. After a minimum of three years of such study, he may make application for registration. It has been the experience of the Board that such provision is unwise, as under the present day standards, it is quite impossible for the student to obtain the necessary technical knowledge without having access to complete laboratory equipment and clinical facilities. This has been demonstrated with the students who have come before our Board enrolled under this clause and been unable to pass the examinations. It thus imposes a hardship on the student and it would be much fairer not to hold out opportunities of this kind. We would suggest the elimination of the "Student's clause," making it necessary for an applicant to be a graduate of an approved Optometry School.

There have been for a number of years repeated complaints of incompetent itinerants. As a result of sentiments expressed by Optometrists throughout the State, as well as laymen, our Board in our Annual Report of 1922, recommended an amendment to Chapter 112 of the General Laws, to make it unlawful to canvass or solicit from house to house as an Itinerant Optometrist. We would submit this recommendation to your Committee, believing it sound.

Another important matter, we would ask your careful consideration; in the opinion of the Board, we feel that the sale of eye-glasses and spectacles

containing lenses for the correction of defective eye sight being sold over the counter as merchandise, is bad practice and should be made unlawful. This view is held by many laymen and in 1923, as evidence of this sentiment, a bill was introduced in the Legislature to make this unlawful. We would suggest that this should be done and should also include a provision that broken lenses can only be replaced by registered Optometrists, as there are many evidences of mistakes being made by incompetent jewelers and others by reason of their inability to accurately analyze lenses, wrong lenses being thereby substituted acting as an injury to the wearer.

The above suggestions are frankly made as a result of actual experience in administration of the law, and we respectfully submit the same for the consideration of your Committee.

Our Board desires to co-operate in every way possible, and would place at your disposal any records or data in our possession that you desire.

Respectfully yours,
(Signed) HOWARD C. DOANE,
Secretary.

These suggestions if put into effect by law or provided for by rule will tend to raise the educational standards and secure higher standards of proficiency for those entering the practice of Optometry, and be a further protection to the public against incompetency.

The Board respectfully asks that more commodious accommodations be provided for our records and files, the space now used being inadequate and conjested.

In September, His Excellency, Governor Cox appointed Mr. Samuel W. Baker of Rockland a member of the Board to succeed Dr. F. Julius Quist of Worcester whose term expired.

The Board desires to express its appreciation of the highly valuable service rendered by Dr. F. Julius Quist during the past five years as a member of the Board.

At the annual meeting of the Board, Matthew J. Fowler of Haverhill was re-elected chairman of the Board for the ensuing year, and Howard C. Doane of Boston was re-elected secretary for the ensuing year.

During the past year 32 men have qualified for registration by examination; 3 registered by reciprocity. Four certificates were revoked and one optometrist died. There is now a total of 983 registered optometrists in Massachusetts.

Financial Report.

Receipts

Unexpended balance in hands of State Treasurer, November 30, 1923	$1342.62
Received from applicants for examination	725.00
Received from re-examination fees	160.00
Received from certificate renewals	1816.00
Received from students' certificates	3.00
Received from duplicate certificates	10.00
Received from reciprocity fees	150.00
Received from High School examinations	10.00
Received from certified statement	1.00
	$4217.62

Expenditures

Cash paid for compensation of commissioners	$1900.00	
Cash paid for clerical assistance	45.00	
Cash paid for carfare and general office expense	398.85	
		$2343.85
Unexpended balance in hands of State Treasurer November 30, 1924		$1873.77

Respectfully submitted,
MATTHEW J. FOWLER, *Chairman.*
HOWARD C. DOANE, *Secretary.*
WALTER I. BROWN.
GEO. S. HOUGHTON.
SAM'L W. BAKER.